

**Comments on the HTRW Work Breakdown Structure & Dictionary  
May-June 1998 Review**

<b>No.</b>	<b>Section or WBS No.</b>	<b>Name of Reviewer</b>	<b>Comment</b>	<b>Response</b>	<b>Type*</b>
1	General	Judy Fulner, DOE-FETC	Suggest that the structure include some designation for RCRA, CERCLA, D&D, WM, ETC. This can be accomplished by adding a digit in front of the Phases.	ICEG recommended no action. Other project description information will provide this data.	C
2	Introduction pg. 8&9	Judy Fulner, DOE-FETC,	The terminology "Non-treatment" should be changed to reflect post treatment or some other descriptor since significant activity takes place to decommission buildings, etc.	The introduction is being revised to adopt this change.	C
3	Introduction pg.12 Second Level Dictionary	Judy Fulner, DOE-FETC,	The Second Level Dictionary, definition of .01 Program Management, Support & Infrastructure (Optional) states that the use of this WBS element on a project would signify that the other elements in a project are not burdened. The Department of Energy management and operating contractors or management and integration contractors make use of this element to collect overall program management cost related to a project and still include some burdened costs in the individual elements.	The text was revised to incorporate the comment.	C
4	Introduction pg. 12 Second Level Dictionary	Judy Fulner, DOE-FETC, (304)285-4520	The Second Level Dictionary Phase 4 definition of EX SITU PHYSICAL TREATMENT includes the chemicals for the treatment. Should the chemicals be included under Phase 5 - Operations and Maintenance?	The dictionary was corrected to include chemicals under Phase 5.	Q
5	Second Level Dictionary, WBS .06	Judy Fulner, DOE-FETC, (304)285-4520	Ron Clendenon has proposed a substitute definition for .06. I agree with the proposed definition.	The updated definition and title for Second Level .06 was adopted.	C
6	Introduction pg. 20, Second Level Dictionary	Judy Fulner, DOE-FETC, (304)285-4520	The Second Level Dictionary includes In Situ Vittrification in both .27 In Situ Thermal Treatment and .29 In Situ Stabilization/Fixation/Encapsulation. I suggest including it in only one of the definitions for clarity's sake.	No action. The items were cross-referenced to make a user aware that In Situ Vittrification is in two places.	C

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7	Third Level Dictionary	Judy Fulner, DOE-FETC, (304)285-4520	Suggest the layout of the third level dictionary be changed to make it easier to use. Add a column to the far right of the table and move the primary unit of measure to that column. Between the WBS and the WBS description add a column for the applicable phases. See attached example.	The layout of the dictionary will be address as a part of the technical edit of the dictionary.	E
8	Third Level Dictionary	Judy Fulner, DOE-FETC, (304)285-4520	Throughout the Level 3 Dictionary the checks under the phases are inconsistent with the text.	A quality assurance review was performed to make sure the structure and dictionary are consistent.	D
9	Third Level Dictionary WBS 01.03	Judy Fulner, DOE-FETC, (304)285-4520	The definition for WBS 01.03 includes material handling, project utilities, and equipment maintenance. A distinction needs to be made between project specific items and program infrastructure.	Phase 8 accomplishes the intent of this comment.	C
10	Third Level Dictionary WBS 01.04 /WBS 02.08	Judy Fulner, DOE-FETC, (304)285-4520	The dictionary should provide for some distinction between WBS 01.04 and WBS 02.08, both titled Construction Management.	WBS .01.04 was eliminated.	D
11	Third Level Dictionary WBS 02.04	Judy Fulner, DOE-FETC, (304)285-4520	The dictionary states that institutional controls are measures as an interim action. Institutional controls are associated with final actions as well. For instance, fences and warning signs can be posted after restoration is complete at burial grounds, etc.	The dictionary was revised.	C
12	Third Level Dictionary WBS 02.06	Judy Fulner, DOE-FETC, (304)285-452	The dictionary should note that the charges for procurement could be included in the costs of the equipment and materials under the remedial action, etc.	The dictionary was revised.	C
13	Third Level Dictionary WBS 03.03	Judy Fulner, DOE-FETC, (304)285-452	Should phase 6 be included? Post-closure sampling plans are prepared.	A definition for Phase 6 was added.	D
14	Third Level Dictionary WBS 03.02 /WBS 03.06	Judy Fulner, DOE-FETC, (304)285-452	The data dictionary should explain the difference between WBS 03.02 Chemical Acquisition Plan, and WBS 03.06 Data Management Plan.	The dictionary was revised.	D

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15	Third Level Dictionary WBS 03.13	Judy Fulner, DOE-FETC, (304)285-452	Add radiological incident to the definition.	The dictionary was revised.	C
16	Third Level Dictionary WBS 07.08	Judy Fulner, DOE-FETC, (304)285-452	Check the reference on "Asbestos Abatement" 33.15.01. Should this be X.15.04?	The reference was corrected.	C
17	Third Level Dictionary WBS 07.11	Judy Fulner, DOE-FETC, (304)285-452	Check the reference for Geophysical/geotechnical investigation 33.xx.xx. Should it be x.07.06?	The reference was corrected.	C
18	Third Level Dictionary	Judy Fulner, DOE-FETC, (304)285-452	Check the dictionary for all references to 33.xx.xxx and replace with the phased structure references.	A quality assurance review was performed to ensure that the references were correct.	D
19	Third Level Dictionary WBS 11.06	Judy Fulner, DOE-FETC, (304)285-452	Strike the sentence on operations and maintenance. The operations and maintenance should be in Phase 5 under the treatment train being used, not under overhead.	The dictionary was revised.	D
20	Third Level Dictionary WBS 12.01 to WBS 12.07	Judy Fulner, DOE-FETC, (304)285-452	Some information needs to be included in the definition to describe differences in hazardous and radiological waste streams. E.g., WBS 12.07 Mixed Waste Storage Facility. Mixed waste is traditionally defined as waste with both hazardous and radiological constituents.	The definitions were expanded to reference a regulation which defines the types of waste.	D
21	Third Level Dictionary and structure	Judy Fulner, DOE-FETC, (304)285-452	Check for inconsistencies in the structure and the dictionary. First noted in WBS x.16.02. Soil Vapor Extraction is listed as 26.34. The Structure includes it as 26.34. The Dictionary describes it as Soil Washing (Surfactant/Solvent)	A quality assurance review was performed to ensure that the references were correct.	D
22	Third Level Dictionary WBS 18.01	Judy Fulner, DOE-FETC, (304)285-452	Phase 5 notes operation and maintenance during construction. Should this be extended to all operation and maintenance of extraction wells?	The definition was corrected to include operation and maintenance in only Phase 5.	D
23	Third Level Dictionary WBS 24.13	Judy Fulner, DOE-FETC, (304)285-452	Phase 4 Reference should be 24.08 instead of 24.09	The reference was corrected.	E

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24	Third Level Dictionary WBS 31.01 and 31.02	Judy Fulner, DOE-FETC, (304)285-452	Suggest that WBS 31.01 and 31.02 be reversed. Deactivation removal of fuel, etc., should be performed before shutdown of the facility.	The comment was not adopted.	C
25	Third Level Dictionary WBS 31.03	Judy Fulner, DOE-FETC, (304)285-452	Definition for the WBS is needed.	A definition was added.	M
26	Third Level Dictionary WBS 08.16	Judy Fulner, DOE-FETC, (304)285-452	Needs UOM, suggest EA.	A unit of measure was added.	D
27	Secondary Parameters	Judy Fulner, DOE-FETC, (304)285-452	I support the need for secondary parameters at Level 3 of the dictionary.	No action necessary.	E
28	Third Level Dictionary WBS 10.09	Judy Fulner, DOE-FETC, (304)285-452	Needs a definition.	A definition was added.	D
29	General	T. Brennan, DOE-SRO and D. Hindle, BSRI	Suggest adding a Phase 7 for Interim Actions accomplished at field activities during RCRA/CERCLA closure activities.	The comment was not adopted. ICEG decided that interim actions could be addressed through the use of the subproject identifier.	D
30	General	T. Brennan, DOE-SRO and D. Hindle, BSRI	Suggest adding a Phase 8 for cross-cutting PROGRAM activities/organizations that span, or are not “phase-specific” (i.e., program administration, technology development activities, program QA/QC, etc.)	Phase 8 was adopted.	D
31	Chao/Hombach WBS Level 4 vs. Level 5 Issue	T. Brennan, DOE-SRO and D. Hindle, BSRI	We prefer to follow Kin Chao’s proposal for the Level 4 activities. As proposed this fits nicely with the manner in which our estimates are developed and will support the HTRW-COA’s that we are currently implementing.	The ICEG decided to adopt the overall WBS structure through Level 3 and a standard for reporting technology costs for Cost Performance Reports.	C

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32	2.03.XX	T. Brennan, DOE-SRO and D. Hindle, BSRI	<p>Structure should have a RFI/RI/BRA Workplan. Note: includes several of the level 3 plans (i.e., health and safety plan, sampling and analysis plan, etc.).</p> <p>Description:</p> <p>The purpose of the RFI/RI/BRA Workplan is to provide a detailed description of the work to be performed in the RFI/RI/BRA Characterization based on a technical analysis of the situation at the unit. The RFI/RI/BRA Workplan provides a history of the waste unit and previous characterization activities, a review of the relevant Pre-Workplan Characterization data, and technical analysis of the characterization data performed by screening against human health risk, and contaminant migration criteria. The plan includes a discussion of the technical approach to sampling at the unit - both for sample media and biota such as plants and animals. This step may require some or all of the following: the development of a scoping meeting package, a revision 0 report, comment resolution, comment incorporation and preparation of a revision 1 report.</p> <p>UOM = EA</p>	A new element was added X.03.17 titled "Combined Work Plan". The comment was used to write the definition.	D
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33	3.03.XX	T. Brennan, DOE-SRO and D. Hindle, BSRI	<p>Add Remedial Design Workplan.</p> <p>Description: This document is prepared as an overview of the remediation process. The document provides a basic summary-level list of the tasks that will be performed during the remedial design (treatability studies, special studies, well pump tests, field surveys, additional data collection, design of drainage systems, design of geosynthetic cover systems, etc.). It also provides a description of any waste treatment schemes anticipated as part of the remedial action which may include items such as preliminary engineering flow diagrams and vendor data.</p> <p>UOM = EA</p>	The title of X.03.14 was changed and the comment was used to expand the definition. Level 1 element would be 3 for this plan.	D
34	3.03.XX	T. Brennan, DOE-SRO and D. Hindle, BSRI	<p>Add Remedial Action Workplan.</p> <p>Description: This work plan provides a general description of the remedial action and the construction work to be performed as well as a schedule for construction and implementation of the remedial action. This report provides a description of how changes to the remedial design will be managed and how DHEC and EPA will be notified of any changes. Also included with this report are any requirements and plans for any waste disposal and transport activities that will occur as a part of the remedial action. A discussion of the actions required to close out the remedial action project (e.g., equipment startup and testing, operations and maintenance plan, as-built drawings, etc.) will also be provided.</p> <p>UOM = EA</p>	The third level element X.03.14 title was changed and the comment was used to expand the definition. The Level 1 element would be 4 for this plan.	D

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35	2.04.XX	T. Brennan, DOE-SRO and D. Hindle, BSRI	<p>Add RFI/RI/BRA Report.</p> <p>Description: Includes all efforts related to the preparation of findings of the remedial investigation and related technical analyses. The RFI/RI/BRA report includes a unit characterization summary, presentation of the unit data, analysis of contaminant fate and transport, human health risk assessment, ecological risk assessment, and the determination of appropriate remedial goal options. Includes all activities required to prepare, review, revise, and approve the RFI/RI/BRA report. This step may include the development of a scoping package, a revision 0 document, comment resolution, comment incorporation and the preparation of a revision 1 document.</p> <p>UOM = EA</p>	An element was added X.04.15 for Combined Reports and this comment was used to formulate a definition.	D
36	2.04.XX	T. Brennan, DOE-SRO and D. Hindle, BSRI	<p>Add Proposed Plan.</p> <p>Description: The SB/PP document describes the preferred alternative for remediation in layman's terms. Scope includes the development of scoping packages, revision 0 document preparation, comment resolution, comment incorporation and the preparation of a revision 1 document. It may also include attendance at public meetings.</p> <p>UOM = EA</p>	An element was added X.03.18.	D

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37	2.04.XX	T. Brennan, DOE-SRO and D. Hindle, BSRI	Add Record of Decision. Description: The Record of Decision (ROD) is the document that describes the remediation option agreed upon by the DOE, EPA, and DHEC. Scope includes the development of scoping packages, revision 0 document preparation, comment resolution, comment incorporation and the preparation of a revision 1 document. It may also include attendance at public meetings. UOM = EA	An element was added X.04.15 for the Record of Decision. Another element was also added when reviewing this comment X.04.16 EE/CA-Engineering Evaluation/Cost Analysis.	D
38	X.09.XX	T. Brennan, DOE-SRO and D. Hindle, BSRI	Add Sample Management (includes several of the third level items). Description: Includes preparing and shipping of samples, preparing chain of custody, coordination with samplers, UOM = EA Sampling Event	An element was added X.09.11 for Combined Sample Management which includes performance of X.09.01, X.09.02 and X.09.04 in one process. The dictionary notes the cost should be reported in only one place to avoid duplication.	D
39	X.09.XX	T. Brennan, DOE-SRO and D. Hindle, BSRI	Add Data Management (includes several of the third level items). Description: Includes data validation, incorporation into site databases, & evaluation report. UOM = EA Sampling Event	An element was added X.09.12 for Combined Data Management which includes performance of X.09.06, X.09.07, X.09.08 and X.09.11 in one process. The dictionary notes the cost should be reported in only one place to avoid duplication.	D
40	4.04.XX	T. Brennan, DOE-SRO and D. Hindle, BSRI	Add Post Construction Report (PCR). Description: This document provides a general narrative of the construction activities that have been performed for the remediation project. It includes a brief discussion of unexpected conditions encountered in the field, particularly those that affected the scope or schedule of the construction work. It also identifies design changes that were required during construction and provides required certifications, verifications and as-builts for the remediation project. UOM = EA	An element was added X.04.17 titled Post Construction Design Report and the comment was used to formulate a definition which notes the element includes as built drawings.  Another element was added X.02.11 Project Closeout to address an issue raised when reviewing this element.	D

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41	2.04.06 thru 2.04.09	T. Brennan, DOE-SRO and D. Hindle, BSRI	Move under 2.04.10 (we typically perform these activities under the Prepare & Document FS and then collect actual costs in the same category). In other words, is there value gained in breaking these activities apart under different WBS Sub-elements?	An element was added X.04.18 to cover combined Feasibility Study. The individual elements are needed to address projects performed under NEPA which have distinct activities.	C
42	X.19.03, 04, 05, 07,08	T. Brennan, DOE-SRO and D. Hindle, BSRI	Need to clarify that if the cap is the final closure, inspections and maintenance should be included in Phase 6 instead of Phase 5 since the cap is not in an "operating " mode, but rather in post closure.	A Phase 6 definition was added.	C
43	Inconsistencies in the Structure	Ron Clendenon DOE-RL	Since this structure is noted to be a "work breakdown structure (WBS)," that would imply a list of products or deliverables - not necessarily a list of <i>activities</i> ...A potential problem with the new HTRW WBS is that the fourth level is <b>NOT</b> consistently an activity versus being a product or deliverable. Most notably in Level 2, items 01-09, where the structure goes down to Level 5 quite often. In other words, the new structure is a "mix" of deliverables and activities at all levels below the first level, which makes it very difficult to align this structure to a standardized COA.	ICEG recommended formal adoption only to Level 3. Level 4 will be left to each agency.	C

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44	Inconsistencies in the Structure	Ron Clendenon DOE-RL	On page 10 of the Introduction write up, it is noted that the different phases identified by the first level would have different definitions based upon the type of project (i.e., CERCLA, RCRA, Waste Management, etc.). The draft WBS structure does not differentiate between the different types of projects. In other words, the WBS number “2.04.10” indicates a Feasibility Study, but it does not identify whether it is a Feasibility Study for a CERCLA, RCRA, Waste Management, or D&D project, which might have significant scope and cost differences. If this structure is to work, either another level must be inserted ahead of the first level or the first level must be expanded, to address the “type” of project through individual elements with unique definitions.	The introduction was expanded but the ICEG decided that an additional number would not be included in the ICEG WBS. Users can add additional numbers internally if they desire. Additional project information including the project description and other information is required in the data base used to collect historical information.	D
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45	Introduction	Ron Clendenon DOE-RL	<p>Each element of the structure should represent a <u>unique</u> deliverable or activity with a <u>unique</u> definition. The draft structure, however, includes numerous elements with two or more completely different definitions for the same element identification number and title. The confusion is compounded by the fact that it occurs in elements of two different levels of the structure as illustrated in the following examples:</p> <p><b>First Level Elements:</b> The first level elements denote the different phases of a project and the definition for each phase is different depending on the type of project (e.g., CERCLA, RCRA, Waste Management, etc.)</p> <p><b>Third Level Elements:</b> The second level elements of “Treatment Plant/Facility,” “Storage Facility,” and “Disposal Facility” include many third level elements with definitions depending on the first level phase of the project. The same element has a unique definition for construction (Phase 4 of the first level), and for operations and maintenance (Phase 5 of the first level).</p> <p>These inconsistencies will make it easy for errors and misinterpretations of information to occur in reporting, queries, and analysis of data. The rules for structuring the WBS <u>should not</u> allow individual WBS elements to have multiple definitions.</p>	<p>When addressing the team identified X.05 Site Work and Mobilization/Demobilization in the third level elements in the treatment facilities and technologies as an issue. All mobilization/demobilization has been moved to X.05 to be consistent.</p> <p>Technology specific transportation and setup (sometimes describe as technology specific mobilization/demobilization) should be included under Level 4 of the specific technology.</p>	C
46	First Level Elements	Ron Clendenon DOE-RL	The life cycle phases identified in the first level of the structure do not include the (D&D) phase. This should be added to the phases to cover the entire life cycle of an EM project.	No action necessary. D&D life cycle phases have been defined in the Level 1 dictionary and the introduction is being expanded to address this comment.	D

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47	First Level Elements	Ron Clendenon DOE-RL	The first level of the structure appears to be included for the purpose of capturing total life cycle costs of a project. This is focussed on tracking progress instead of building a structure to provide meaningful cost information to cost estimators and cost reviewers. The project phases are not necessary for this structure and should not be included as part of the structure.	No action necessary.	D
48	Second Level Elements	Ron Clendenon DOE-RL	Costs for the second level elements of "Program Management" and "Project Management" are not normally tracked by the project phases identified in the first level of the WBS and quite often, the phases can overlap with activities going on in more than one phase simultaneously. The phased approach does not lend itself to tracking these kinds of costs.	This comment has been incorporated in adoption of the Phase 8 crosscutting element.	D
49	Second Level Elements	Ron Clendenon DOE-RL	As noted in past comments from RL, the 2nd Level, ".06 Pre-Remedial Surveillance and Maintenance" title should be "Surveillance & Maintenance." Whether it is pre- or post-remediation would be noted by which "phase" is used in the first level of the WBS number. The activities listed under ".06" can apply to both "pre" and "post" remedial action or D&D.	The revised definition and title were adopted.	C
50	Third Level Elements .01.04 and .02.08, Construction Management	Ron Clendenon DOE-RL	Suggest deleting elements .01.04. The definitions are essentially the same and it is not appropriate to have construction management as an element under program management. In addition, construction management is not normally considered to be a sub element of project management (see DOE Cost Guide, Volume 6, Chapter 6) and it is suggested that construction management be moved to the second level.	Element X.01.04 was deleted.	C

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51	Third Level Elements .01.05, Government Construction Management	Ron Clendenon DOE-RL	Suggest moving this element from “Program Management” to “Project Management and Support” since it is directly related to a specific project. In addition, why has government activities related to construction management been identified separately? Government personnel, in many of the agencies, can be involved in many of the program and project planning, management and design deliverables identified in the WBS. Making separate WBS elements for government versus contractor work is not practical and it is suggested that this element be deleted.	The revised definitions and Phase 8 address this comment.	C
52	Third Level Elements in Program Management and Project Management	Ron Clendenon DOE-RL	Third level elements in Program Management and Project Management should be consistent. For example, .02.02, “Community Relations” and .02.03, “Regulatory Interaction” are at the third level in Project Management and Support, but are at the fourth level in Program Management. If these are considered to be important enough to be at the third level in one area they should be treated the same everywhere.	The revised definitions and Phase 8 address this comment. The elements can be performed for a specific project or as program management across many projects.	C
53	Third Level Element .02.06, Procurement-E quipment and Materials	Ron Clendenon DOE-RL	This element singles out procurement activities related to the procurement of project equipment and materials, but no other element identifies procurement activities related to other procurement actions such as for construction or A/E services. Suggest this element include any procurement activities.	The definition was revised to reflect the proper use of this element. The element is to be used when procurement is not related to a specific project.	C

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54	Third Level Element .02.07, A/E Support During Remedial Actions	Ron Clendenon DOE-RL	This is another instance where the structure is organizationally instead of product oriented. The definition for this element describes A/E services during remedial actions/construction which are typically considered Title III services. Title III services are typically considered part of construction management and it is suggested that this element be deleted and the definition of elements .02.08, "Construction Management" be revised to include Title III activities. If the development team chooses to keep this element, suggest changing the title and definition of the element to recognize that it also includes support during construction.	The definition was clarified.	C
55	Third Level Element .02.05, Post Design Support	Ron Clendenon DOE-RL	These activities are typically considered to be part of project design activities and this element should be moved to .04, "Studies/Design Documentation."	No action taken. ICEG determined both elements are needed.	C
56	Elements not Identified	Ron Clendenon DOE-RL	There are several elements that are typical to construction projects, but are not identified in the WBS. Examples include NEPA documentation, permitting, Conceptual Design, Quality Assurance Plan, Site Evaluation Plan, Operational Readiness Review and project start-up. Some of these can be significant cost and schedule drivers and should be included as third level elements. The WBS development team should refer to DOE Cost Guide, Volume 6, Chapter 6 for a listing of typical construction project elements.	A quality assurance review was performed. Elements should be included which cover all of the elements in the comment. Commenters should review the structure when it is distributed for pre-publication review to ensure the elements have been addressed.	C

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57	Third Level Element .03.04, Site Health and Safety Plan	Ron Clendenon DOE-RL	The definition indicates that this element only applies to a site level plan. Where will costs for such things as project specific safety analysis reports and safety plans be captured?	Phase 8 will address this issue. The element will be used for project specific plans and Program (Site Wide) when the Level 1 is 8 for Phase 8.	C
58	Second Level Elements .11 - .13, Treatment, Storage and Disposal Facilities	Ron Clendenon DOE-RL	The third level elements of these items are generally oriented to a breakdown of the various types of structures, plant, and equipment needed to provide the second level facility. The structure attempted to pick up operations activities by either making a separate element for operations or by having two definitions (a construction definition for Phase 4 and maintenance definition for Phase 5) for the same element. This inconsistent approach does not adequately address operations and maintenance of the facilities. Suggest revising the third level elements to include separate elements that address the significant cost drivers for operations, maintenance and surveillance.	This comment was addressed during the ICEG meeting to the satisfaction of the commenter. No additional action is necessary.	C
59	Second Level Elements .11 - .13, Treatment, Storage and Disposal Facilities	Ron Clendenon DOE-RL	The definitions of the hazard categories (low hazard, moderate hazard, high hazard) reflected in some of the third level elements are not consistent with recognized definitions. The value of collecting cost information by the hazard category is questioned.	The definitions have been expanded to define the hazard categories and incorporate a reference.	C
60	General Comments	Ron Clendenon DOE-RL	The structure, in many instances, seems to reach a waste type structure in the fourth level. Collection of costs by waste type is not feasible for our multi-waste type facilities on the Hanford Site. Work breakdown structures and activities are not organized by waste type.	Level 4 was not formally adopted by the ICEG. Each agency will have responsibility to determine further adoption.	D

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61	General Comments	Ron Clendenon DOE-RL	This structure is understandably, significantly more detailed for environmental restoration and construction type activities. However, if the intent is to implement use of the structure for all EM work, it must be more complete in the areas of waste management, facilities stabilization, technologies, and facility operations and maintenance. EM projects often involve operations of waste treatment, storage and disposal facilities and these costs usually represent a significant portion of the total life cycle costs of the facility. The current proposed draft structure is not adequate for these types of projects.	As we gain experience in using the WBS it can be expanded to address this comment. In addition, waste management personnel were requested to perform additional review.	D
62		R. Nash, NFSEC	Recommend adding and additional phase - IRA (Interim Removal Action)	The ICEG decided no action necessary. Subprojects can be used to address IRA.	C
63		R. Nash, NFSEC	We need phase definitions for the UST program.	The definitions provided by Navy have been adopted and incorporated in the Level 1 dictionary.	C
64		R. Nash, NFSEC	We may want to consider including phase definitions for compliance activities as well, unless this is out of scope for our WBS.	No action necessary at this time. When preparing the WBS, the developers tried to make the definitions generic in hopes that the structure could be used for other environmental work.	C
65	Second Level, .07, .09	R. Nash, NFSEC	Is labor for sample collection under second level .07 or .09?	Labor costs for sample collection should be included in X.07.	C
66	Second Level Dictionary, Account .23, In Situ Chemical Treatment	R. Nash, NFSEC	Last sentence under Phase 4. Change to : "The types of in situ treatment include chemical reactive barriers, oxygen release compounds, and neutralization."	The definition was adopted.	C
67	Page 17; 2nd Level .18 3rd Level .02	Bill Hombach Team Analysis 703-729-6777	This element should not require any measurable operations and support cost. Suggest removing mark under Phase 5.	No action necessary. Phase 5 is needed.	

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**Comments on the HTRW Work Breakdown Structure & Dictionary  
May-June 1998 Review**

68	Page 21; 2nd Level .18 3rd Level .03	Bill Hombach Team Analysis 703-729-6777	Change from "Subsurface Drainage/Collection" to " Subsurface Drainage/Collection/French Drain"	The element title was revised.	C
69	Page 21 2nd Level .19	Bill Hombach Team Analysis 703-729-6777	Reorganize and rename third level elements to:  .01 (No Change) .02 (No Change) .03 RCRA C-Cap .04 RCRA D-Cap .05 Other Engineered Caps .06 Bottom Barriers	The third level element and definitions for " Caps" was revised. The structure used in the 33X.08 was adopted.	C
70	Page 23; 2nd Level .25 3rd Level .16	Bill Hombach Team Analysis 703-729-6777	Add third level element for "Soil Vapor Extraction"		D
71	Page 24; 2nd Level .29	Bill Hombach Team Analysis 703-729-6777	Change from "IN SITU <b>STABILIZATION/FIXATION/ENCAPSULATION</b> " to " IN SITU <b>SOLIDIFICATION/FIXATION/ENCAPSULATION</b> "	No action necessary. Stabilization has a boarder context.	C
72	Page 27; 2nd Level .30 3rd Level .18	Bill Hombach Team Analysis 703-729-6777	Change from "Decontaminating/Dismantling/Disposal of Temporary Fuel Storage Facility" to Dismantling of Temporary Fuel Storage Facility"	The title was adopted.	C
73	General	Steve Tower, DOE-RFFO	In reply to your memo of May 28, 1998, the Rocky Flats Field Office reviewed the current draft of the proposed Hazardous, Toxic and Radioactive Waste Cost Structure and found it to be satisfactory for its intended purpose. It is likely to be a useful tool for cost control and cost reduction when implemented across the complex.	No action necessary.	E

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**Comments on the HTRW Work Breakdown Structure & Dictionary  
May-June 1998 Review**

74	Phase 6 - PSLM (Second Level Elements)	Steve McCracken/Bill Owen, DOE-WSSRAP	When the disposal facility is closed and the WSSRAP project is considered complete there will be, within the disposal facility, a system designed to collect any leachate which might migrate through the facility. The leachate will be analyzed, and if criteria are exceeded, the leachate will be treated prior to release. This activity is expected to be minimal but would continue into the foreseeable future and is considered part of the post-closure surveillance and long-term maintenance at WSSRAP. It would be surprising if such a leachate collection system were not a part of most disposal facilities being constructed in geographical areas that receive moderate to heavy annual rainfall. If that is the case, it would seem appropriate to activate elements .17 - SURFACE WATER/SEDIMENTS CONTAINMENT, COLLECTION OR CONTROL and .11 - TREATMENT PLANT/FACILITY in the Post-Closure and Long-Term Maintenance Phase of the HTRW WBS.	A Phase 6 definitions was included.	C
75	General	A.L. Tacoas, Susan Heston, DOE-CH		No action necessary.	E
76	General	R1 - AACE International	Comment C1 - From my cursory review of the materials, I don't see any significant problems with the proposed WBS.	No action necessary.	E
77	General	R2 - AACE International	Comment C1[sic] - The revised WBS is organized well to cover all phases of work, from Remedial Investigations and Feasibility Studies to Remedial Actions (Construction).	No action necessary.	E
78	General	R2 - AACE International	The addition of measurable attributes to the elements will assist in the estimating and collection of historical data for these work items. This will allow for comparison of costs between projects and between public and private types of work.	No action necessary.	E

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**Comments on the HTRW Work Breakdown Structure & Dictionary  
May-June 1998 Review**

79	General - WBS Numbering	R2 - AACE International	Comment C3 - WBS numbering needs to be used in conjunction with the WBS Dictionary so that all elements are fully defined.	A quality assurance review was performed to ensure that all elements were included in both the structure and the dictionary.	E
80	First Level WBS Numbering	R2 - AACE International	Comment C4 - First level numbering system is redundant; we have standardized to using the second level numbers to match activity IDs in project management software (because of the limitation of characters).	No action necessary.	D
81	General	R2 - AACE International	Comment C5 - As always, it will be important to use the right level of breakdown for any project; a major project may need to be broken down to the fifth or sixth level; smaller projects do not.	No action necessary.	E
82	General	Kate Peterson, USACE	The matrix format of the proposed HTRW WBS is not simple to understand. Therefore, communicating how to use the HTRW WBS will be very difficult. To facilitate understanding and use of the HTRW WBS, break out each phase into a separate WBS. As the phase-based structure was progressed and was presented, several benefits are documented, but we now believe that the ICEG should not necessarily abandon the present structure (each phase a separate structure), but only enhance it. The proposed phase-based structure is very complicated. Although the phase-based structure is very detailed, we feel it will not be utilized to its full extent due to lack of time and resources in the field. In addition, the ICEG needs to define specifically the purpose of the HTRW WBS and what information is able to be obtained from the field and concentrate our structure to meet that purpose and what information is available.	This comment was addressed in the ICEG meeting on 8/5-7/98. No further action is necessary.	C

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**Comments on the HTRW Work Breakdown Structure & Dictionary  
May-June 1998 Review**

83	General	Kate Peterson, USACE	The HTRW WBS should be limited to Environmental Restoration (ER) exclusively. Possibly, Waste Management should have its own structure, since WM is DOE specific. If later we want to incorporate appendixes that address other agencies and programs using parts of the HTRW WBS we can. But in order to further the accomplishments of the ICEG HTRW WBS, we believe the structure should be kept to ER. This will also facilitate keeping the HTRW WBS simple.	This comment was addressed in the ICEG meeting on 8/5-7/98. No further action is necessary.	C
84	Level 1, Subproject Identification	Kate Peterson, USACE	The Option Level - Subproject Identification should not be included in the HTRW WBS. This type of information should be included in a users guidance document. Therefore, if a user guide was produced for the HTRW WBS, how to incorporate the subprojects could be explained in that document.	This comment was addressed in the ICEG meeting on 8/5-7/98. No further action is necessary.	C
85	Level 3, Remedial Action	Kate Peterson, USACE	The third level of the Remedial Action should be listed with a unit of measure associated with each third level item. Presently review is very difficult because it is so hard to figure out.	This comment will be addressed in the technical edit prior to formal publication.	C
86	First Level Dictionary	Kate Peterson, USACE	The First Level Dictionary is an oxymoron, since the phases are never defined. If the ICEG wants to have the phase approach a generic definition should be written for each phase. Again if the HTRW WBS was limited to ER a generic definition would be more achievable.	This comment was addressed in the ICEG meeting on 8/5-7/98. No further action is necessary.	C

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**Comments on the HTRW Work Breakdown Structure & Dictionary  
May-June 1998 Review**

87	Second Level, Remedial Action	Kate Peterson, USACE	<p>The Second Level for the Remedial Action phase should be as follows:</p> <ul style="list-style-type: none"> <li>Mobilization and Preparatory Work.</li> <li>Monitoring, Sampling, Testing, and Analysis.</li> <li>Site Work.</li> <li>Ordnance &amp; Explosive - Chemical Warfare Material (OE-CWM) Removal and Destruction.</li> <li>Surface Water Collection and Control.</li> <li>Groundwater Collection and Control.</li> <li>Air Pollution/Gas Collection and Control.</li> <li>Solids Collection and Containment.</li> <li>Liquids/Sediments/Sludges Collection and Containment.</li> <li>Drums/Tanks/Structures/Miscellaneous Demolition and Removal.</li> <li>Biological Treatment.</li> <li>Chemical Treatment.</li> <li>Physical Treatment.</li> <li>Thermal Treatment.</li> <li>Stabilization/Fixation/Encapsulation.</li> <li>(Reserved for Future Use)</li> <li>Decontamination and Decommissioning (D&amp;D).</li> <li>Disposal (Other than Commercial).</li> <li>Disposal (Commercial).</li> <li>Site Restoration.</li> <li>Demobilization.</li> <li>General Requirements (Optional Breakout).</li> <li>Other (Use Numbers 90-99).</li> </ul> <p>HTRW WBS</p>	This comment was addressed in the ICEG meeting on 8/5-7/98. No further action is necessary.	D
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**Comments on the HTRW Work Breakdown Structure & Dictionary  
May-June 1998 Review**

88	Introduction	Kate Peterson, USACE	Figures 1-6, in the Introduction should be eliminated. As should the matrix format. This just causes confusion.	The introduction is being revised to make the format more understandable.	C
89	Introduction	Kate Peterson, USACE	The Introduction, Purpose - Application paragraph should be revised with input from the HTRW WBS Committee. The primary purpose of the HTRW WBS is to assemble historical cost data in standard structure to facilitate collection of cost data for dissemination of typical unit cost range information on HTRW cleanup projects foremost the remedial action and operation and maintenance costs. Other benefits that could be realized are providing a project check list, tracking, comparing, and forecasting costs for the historical information, and benchmarking model generated estimates to the historical cost information. The ICEG should not have a purpose of the HTRW WBS be to cost and schedule estimating, for bid solicitation, collection, and evaluation, and to validate and calibrate cost estimate and software tools. The purpose of the HTRW WBS should be succinct and clear. The purpose of the HTRW WBS should not be so broad it will not be useful.	The introduction is being revised to reflect the decisions made in the ICEG 8/5-7/98 meeting.	C

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May-June 1998 Review**

90	General	Stan Hanson, USACE	<p>In a very long comment, the commenter summarized the development of the current (System 32, 33, 34) HTRW WBS, and the progression of the USACE implementation of that WBS. He included citations of related Engineer Regulations, guidance documents, management systems and cost engineering models that support the current HTRW WBS. With that as background, the comment is the following.</p> <p>Proposed WBS Update. Due to the above history of the HTRW WBS usage in the Army Corps of Engineers, any major changes would be difficult, time consuming, and expensive to implement. Major changes would be any changes at the second level (PROMIS compatible) and any changes to the existing third level items (HCAS required reporting level). Minor changes, however, could be done at minimal disruption, rework, and expense. These would include: updating the technologies portion of the HTRW RA WBS and HTRW O&amp;M WBS to add new technologies to the bottom of the lists at the third level, while leaving the existing technologies in place; revising the HTRW O&amp;M WBS to make the fourth level (and lower if needed) acceptable for Cost and Performance reporting requirements.</p>	This comment was addressed in the ICEG meeting on 8/5-7/98. No further action is necessary.	
91	Page 24 2nd Level .30	Bill Hombach Team Analysis 703-729-6777	Change from “EX SITU <b>STABILIZATION/FIXATION/ENCAPSULATION</b> ” to “ EX SITU <b>SOLIDIFICATION/FIXATION/ENCAPSULATION</b> ”	No action necessary. Stabilization has a broader context.	
92	Page 27; 2nd Level .30 3rd Level .19	Bill Hombach Team Analysis 703-729-6777	Change from “Decontaminating/Dismantling/Disposal of Intermediate Fuel Storage Facility” to Dismantling of Intermediate Fuel Storage Facility”	The title was revised.	

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**Comments on the HTRW Work Breakdown Structure & Dictionary  
May-June 1998 Review**

93	First Level of the WBS	U.S. Air Force, Headquarters, Air Force Center for Environmental Excellence, Environmental Restoration (HQ AFCEE/ER)	The first level of the WBS must contain a Program Planning “phase,” in addition to the six existing Phases. The six existing phases work well for tracking project related restoration costs. However, they do not accommodate the Air Force’s need to account for program planning resources at the top level of the WBS. Examples of activities that require program planning resources are budget planning, developing the AFCEE restoration program initiatives, and negotiating large delivery order contracts. These are typically management and in-house labor costs that are not associated with the six existing level one phases. AFCEE needs to clearly account for all Air Force resources in the first level of the WBS. We believe that this is best achieved by adding a phase called Program Planning to level one of the WBS. Second level elements 1, 2, and 3 would be the elements applied or mapped to Program Planning.	Phase 8 addresses this comment.	D (They called it “N” for “New WBS element necessary”)
94	Level 2 of the WBS	U.S. Air Force, HQ AFCEE/ER	Move Natural Attenuation for Level 3 (X.21.08) to the status of its own Level 2 technology.	The comment was not adopted.	C (“O” for other)
95	Level 3 of the WBS	U.S. Air Force, HQ AFCEE/ER	The development and use of Geographical Information Systems (GISs) constitute investigation techniques not presently found in the WBS. GIS techniques should be added to the WBS Third Level.	An element was added for GISs X.07.16.	D (“N”)

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**Comments on the HTRW Work Breakdown Structure & Dictionary  
May-June 1998 Review**

96	Introduction	Ron Clendenon, DOE-RL	It is noted in the Introduction write up that Level 3 is where “the data will be collected and evaluated.” In reviewing the items comprising Level 3 and Level 4, it is clear to me that in order to get meaningful data, Level 4 must be the reporting level. I understand the intention of the 2ndary parameters (which I heartily endorse) was to add meaning to the Level 3 items, however, I submit that there are more “activities” in Level 4 that would supply meaningful data than the “deliverables” in Level 3. The 2ndary parameters help, but they won’t give you the information that the Level 4 would.	No action necessary.	E
97	Second Level of the WBS	Ron Clendenon, DOE-RL	Second levels 11-13 are still confusing to me as to how to organize, and differences between construction and operations are still not clear. This appears to be a “functional” breakdown of the facility, not a “construction” breakdown of the facility. And again, deliverables/tasks are being mixed up between levels 3 and 4.	This comment was addressed during the ICEG meeting to the satisfaction of the commenter. No additional action is necessary.	E
98	General	Ron Clendenon, DOE-RL	Although this version is being touted as being comprehensive to include waste management, I am inclined to agree with my colleague at DOE-Richland, Joe Rasmussen, that this structure is probably not ready yet for waste management activities. For ER and D&D activities, it is pretty comprehensive and can probably be used. However, I do not believe the additions for the waste management activities have gone under much review yet from the waste management community, so I hope that DOE does not force this upon all of EM as it currently exists.	As we gain experience in using the WBS it can be expanded to address this comment. In addition, waste management personnel were requested to perform additional review.	E

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99	General	Joe Rasmussen, Ron Clendenon, DOE-RL	RL supports the purpose of the cost structure as providing “ a common interagency cost language that can be used to help generate cost estimates, share cost data to facilitate sharing of lessons learned and benchmarks, develop cost estimating models, and to provide useful historical cost information.” ... Unique definitions and units of measure (metrics) for each element would provide a uniform basis for meaningful cost information. A standardized cost estimating database would be of value at the Hanford site. It would provide improved credibility to estimates and would support better communications through standardization of terminology.	No action necessary.	E
100	General	Joe Rasmussen, Ron Clendenon, DOE-RL	Efforts to implement a standard structure to collect useful cost information is a worthwhile endeavor as long as the value added exceeds the cost of the effort to implement and maintain the information...Issues and impacts to be considered include the following: <ul style="list-style-type: none"> <li>* Impacts of expanding focus of the structure from environmental restoration to all EM work</li> <li>* Impacts to modify contracts to prescribe and mandate use of uniform cost collection structures at the contractor level</li> <li>* Consideration of a graded approach to collecting cost information to ensure that excessive effort is not spent on collecting cost information having minimal significance.</li> </ul>	No action necessary.	E

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101	General	Joe Rasmussen, Ron Clendenon, DOE-RL	<p>It appears that this draft HTRW cost structure is an effort to evolve the current HTRW...WBS from a cost management tool to a project management that will prescribe a common structure for organizing and collecting all EM project costs. The effort has resulted in three distinct structures rolled to-gether. The draft structure is now a programming/regulatory phasing structure (the first level), a project work breakdown structure (usually the second and third levels), and cost estimating code of accounts (usually the fourth level and lower.)</p> <p>Consequently, it is program/project sequence oriented, product oriented and activity oriented, making it difficult to effectively implement the structure as a cost engineering tool and to clearly understand how it aligns or crosswalks with existing DOE and contractor structures. <u>The real purpose of the structure needs to be revisited....</u></p>	This comment was addressed in the ICEG meeting on 8/5-7/98. No further action is necessary.	C
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102	General	Joe Rasmussen, Ron Clendenon, DOE-RL	<p>If this structure is to be used for all EM work, the implementation requirements must be based on a clear understanding of the type of cost information to be obtained, the use of the information, and the system (people, software and hardware) capabilities to maintain and analyze the data.</p> <p>* If the structure is to be a work breakdown structure, then cost information will be arranged by project or project element (studies, design documents, waste treatment facility, etc.). This kind of cost information can be used to estimate or compare costs of similar projects or project elements especially during preliminary planning when little information and scope definition is available...</p> <p>* If the structure is to be a code of accounts, then cost information will be arranged by the activities required to produce the project elements (sample collection, perform design reviews, install 6" steel piping, etc.). This type of cost information can be used to estimate and compare costs of project activities and is usually used when a project or project element is well defined and quantified...</p> <p>The most logical conclusion would be to require costs to be reported to the appropriate level of the work breakdown structure and to provide the code of accounts portion of the structure for use, at the discretion of the field offices, as a cost control structure and/or activity checklist.</p>	DOE will address this comment as a part of our internal agency implementation.	C
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**Comments on the HTRW Work Breakdown Structure & Dictionary  
May-June 1998 Review**

103	General	Joe Rasmussen, Ron Clendenon, DOE-RL	The current implementation plans would require contractors to report project costs by a prescribed work breakdown structure. It appears that the requirement does not expect to direct to contractor to use the prescribed structure in its project management and cost collection systems. However, the proposed...structure is developed to a low level of detail within projects and if the contractor's current structure is not consistent with the proposed structure, the contractor will be forced to change its structure to be in alignment. This is a key issue because without a common structure, cost information will be difficult clearly understand, compare and analyze, but by requiring the use of a common detailed project work breakdown structure, we are being too prescriptive of the contractor.	DOE will address this comment as a part of our internal agency implementation.	E
104	General	Joe Rasmussen, Ron Clendenon, DOE-RL	The write-up indicates that costs would be reported upon completion of individual projects. This does not recognize that many operations activities can go on for years and reporting requirements should address cost reporting for these types of activities.	The introduction is being revised to address this comment. At a minimum costs should be collected at the end of individual projects.	D

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